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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,320	03/11/2004	John A. Moon	CC-0734	1765

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EXAMINER	
EVANS, FANNIE L	

ART UNIT	PAPER NUMBER
2877	

DATE MAILED: 04/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/800,320	MOON ET AL.	
	Examiner	Art Unit	
	F. L. Evans	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21 and 23-29* is/are rejected.

7)☐ Claim(s) *22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 March 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *101204*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The Information Disclosure Statement

The prior art cited in the information disclosure statement filed on October 12, 2004 has been considered.

The Drawings

The drawings are objected to under 37 CFR § 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the cylindrical lens specified in claims 9 and 22 must be shown or the feature canceled from the claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR § 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR § 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. § 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13, 19, 26 and 27 are rejected under 35 U.S.C. § 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The lack of an antecedent for "the first relative position of the reflector" in line 9 of claim 1, "the first mirror" in line 2 of claim 26 and "the first optical waveguide" bridging lines 2 and 3 of claim 27 render these claims and any claim dependent therefrom indefinite.

Claim 19 is incomplete in that it sets forth at least a second optical waveguide without setting forth a first optical waveguide.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 5, 7, 8, and 13 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Bullock et al (US 2,723,589).

Bullock et al disclose an optical spectrum analyzer comprising a collimator (18) to collimate the input signal; a light dispersion element (20) that diffracts the collimated light into spectrally spaced optical wavelengths; a reflector (22) that reflects the spectrally-spaced optical wavelengths back to the light dispersion element (20); a first mirror (94) disposed adjacent to the reflector (22) that provides an optical reference signal indicative of the first relative position of the reflector (lines 39-73 of column 4); and a pivoting mechanism (24) that rotates the reflector (22) to spectrally move the spectrally-spaced optical wavelengths to select an optical wavelength band. The analyzer includes an optical detector (32). The pivoting mechanism includes an actuator (80, 84, 88) for moving the reflector about a pivot point. The reflector is a flat mirror. An optical source (92) provides light for projecting onto and reflecting off

of the first mirror. Applicant's attention is directed to Bullock et al in its entirety with particular attention directed to Figs. 5-7 and the text pertaining thereto.

Claims 14-17, 19-21, 23-25 and 27-29 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Lefevre et al (US 5,886,785).

Lefevre et al disclose an optical spectrum analyzer comprising a collimator (32) to collimate the input signal; a light dispersion element (2) that diffracts the collimated light into spectrally spaced optical wavelengths; a reflector (3) that reflects the spectrally-spaced optical wavelengths back to the light dispersion element (2), wherein the light dispersion element (2) diffracts the reflected optical wavelengths back to the collimator (32); and a pivoting mechanism (4, 50-53) that rotates the reflector (3) to spectrally move the spectrally-spaced optical wavelengths to select an optical wavelength band. In one embodiment, a first optical waveguide (35, 38) projects the optical signal and a second optical waveguide (36, 39) receives at least one of the spectrally-spaced optical channels. In another embodiment, a first waveguide (31) projects the optical signal and receives at least one of the selected optical channels. The analyzer includes an optical detector (6). At least a second optical waveguide (59) is provided for projecting a second input signal. The pivoting mechanism includes an actuator (51, 53) for moving the reflector about a pivot point. The reflector is a reflecting dihedron (line 48 of column 4). The dispersing element is a diffraction grating (lines 47 and 48 of column 4). The collimator can be a laser diode doublet or an aspherical lens (lines 1-4 of column 6). A coupling device (8) provides a quadruple pass optical spectrum analyzer. The components of the optical filter set forth in claim 29 are disclosed by Lefevre et al. Applicant's attention is directed to Lefevre et al in its entirety.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. § 103(c) and potential 35 U.S.C. § 102(e), (f) or (g) prior art under 35 U.S.C. § 103(a).

Claims 1-5, 7, 8 and 10-13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lefevre et al (US 886,785) in view of Bullock et al (US 2,723,589).

Lefevre et al disclose an optical spectrum analyzer comprising essentially every claimed feature except first mirror disposed adjacent to the reflector that provides an optical reference signal indicative of the first relative position of the reflector. Applicant's attention is directed to the discussion of Lefevre et al, above.

Bullock et al disclose an optical spectrum analyzer comprising a collimator (18) to collimate the input signal; a light dispersion element (20) that diffracts the collimated light into spectrally spaced optical wavelengths; a reflector (22) that reflects the spectrally-spaced optical wavelengths back to the light dispersion element (20); a first mirror (94) disposed adjacent to the reflector (22) that provides an optical reference signal indicative of the first relative position of the reflector (lines 39-73 of column 4); and a pivoting mechanism (24) that rotates the reflector (22) to spectrally move the spectrally-spaced optical wavelengths to select an optical wavelength band.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to provide the optical spectrum analyzer of Lefevre et al with a first mirror disposed adjacent to the

reflector that provides an optical reference signal indicative of the first relative position of the reflector in order to facilitate the identification of the spectral lines incident on the detector. The use of such a first mirror is shown to be conventional in the art of spectroscopy by Bullock et al..

Claim 18 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Lefevre et al (US 886,785) in view of Dolin (US 3,460,892).

Lefevre et al disclose an optical spectrum analyzer comprising essentially every claimed feature except the position sensor that provides a signal indicative of the displacement of the reflector. Applicant's attention is directed to the discussion of Lefevre et al, above.

Dolin discloses an optical spectrum analyzer comprising a collimator (20) to collimate the input signal; a light dispersion element (21) that diffracts the collimated light into spectrally spaced optical wavelengths; a reflector (25) that reflects the spectrally-spaced optical wavelengths back to the light dispersion element (21), wherein the light dispersion element (21) diffracts the reflected optical wavelengths back to the collimator (20); and a pivoting mechanism (M) that rotates the reflector (25) to spectrally move the spectrally-spaced optical wavelengths to select an optical wavelength band. The spectrum analyzer of Dolin is provided with a position sensor (46, 48-51) that provides a signal indicative of the displacement of the reflector.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to provide the optical spectrum analyzer of Lefevre et al with a position sensor that provides a signal indicative of the displacement of the reflector so that an accurate indication of the wavelength output of the spectrum analyzer could be obtained. Such a position sensor is shown to be conventional in the art of spectroscopy by Dolin.

Additional Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

He et al (US 6,636,306 B2) disclose a double pass optical spectrum analyzer with dihedral reflector.

Allowable Subject Matter

Claims 6 and 9 would be allowable if rewritten to overcome the rejection under 35 U.S.C. § 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 22 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claim 6 , the prior art of record, taken alone or in combination, fails to disclose or render obvious an optical spectrum analyzer comprising a second mirror disposed adjacent to the at least one of the reflector and light dispersion element to provide a second relative position of the reflector, in combination with the rest of the limitations of the claim .

As to claims 9 and 22, the prior art of record, taken alone or in combination, fails to disclose or render obvious an optical spectrum analyzer comprising a cylindrical lens disposed between the light dispersion element and the reflector, in combination with the rest of the limitations of the claim

Fax/Telephone Numbers

Any inquiry concerning this communication or earlier communications from the examiner should be directed to the examiner whose telephone number is (571) 272-2414.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext 77. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

F. L. EVANS
PRIMARY EXAMINER
ART UNIT 2877

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April 14, 2006